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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/486,530	06/01/2000	PETER CHARLES FLORENCE	P/25-254	8653
2352	7590	09/03/2004	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			FAN, CHIEH M	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/486,530

Applicant(s)

FLORENCE ET AL.

Examiner

Chieh M Fan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1.8</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because the specification does not contain section headings.

Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in

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upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

3. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

4. The disclosure is objected to because of the following informalities:

"microprocessor 1113" in lines 20 and 21 of page 30 and in lines 2 and 4 of page 31 should be changed to --- microprocessor 1133 ---; and it appears "which cse" in line 4 from the bottom of page 33 should be changed to --- which case ---.

Appropriate correction is required.

***Information Disclosure Statement***

5. All the references listed in the information disclosure statement (IDS) filed 2/5/2001 have been listed in the IDS filed 2/28/00. The references listed on the IDS filed 2/5/2001 therefore have been crossed out.

***Claim Objections***

6. Claims 15, 16, 23, 32 and 33 are objected to because of the following informalities:

Regarding claim 15, "a personal computing device" in line 2 should be changed to --- the personal computing device --- since such limitation has been recited in claim 1.

Regarding claim 16, it is suggested changing "further comprising a personal computing device," in lines 1-2 to --- wherein ---, since the limitation "a personal computing device has been recited in claim 1.

Regarding claim 23, "an in-phase signal and a quadrature phase signal" in line 3 should be changed to --- the in-phase signal and the quadrature phase signal --- since such limitation has been recited in claim 22.

Regarding claim 32, "a personal computing device" in line 2 should be changed to --- the personal computing device --- since such limitation has been recited in claim 1.

Regarding claim 33, it is suggested changing "further comprising a personal computing device," in lines 1-2 to --- wherein ---, since the limitation "a personal computing device has been recited in claim 18.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 12-15 and 30-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 12-14, claim 12 recites the limitation "the means for altering parameters" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 15, claim 1, on which claim 15 depends recites that the communication apparatus comprises "means for exporting at least a part of the digitized modulated signal to a personal computing device", which clearly indicates the communication apparatus and the personal computing device are two separate devices. However, claim 15 recites that "the communication apparatus is within the personal computing device", which clearly contradicts the limitation in the parent claim 1.

Regarding claims 30 and 31, claim 31 recites the limitation "the means for altering parameters" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 32, claim 18, on which claim 32 depends recites that the communication apparatus comprises "means for importing a digital modulated signal to a personal computing device", which clearly indicates the communication apparatus and the personal computing device are two separate devices. However, claim 32 recites that "the communication apparatus is within the personal computing device", which clearly contradicts the limitation in the parent claim 18.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 2, 4, 6-9, 11-14, 16-19, 21, 24-27, 29-31 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Leung et al. (U.S. Patent No. 5,444,697, "Leung" hereinafter).

Regarding claim 1, Leung teaches a communication apparatus comprising means for receiving a modulated radio-frequency signal (input to 43 in Fig. 1), means for down-converting a received modulated radio-frequency signal (43, 52, 53 in Fig. 1),

means for digitizing a down-converted signal (61 in Fig. 1, col. 8, lines 25-27) and means for exporting (63 to 70 in Fig. 1) at least a part of the digitized modulated signal (i.e., a QAM signal) to a personal computing device (70 in Fig. 1, col. 6, lines 27-29).

Regarding claim 2, Leung further teaches means for connection to at least one bus within the personal computing device (col. 6, lines 38-39).

Regarding claim 4, Leung also teaches means for dividing the signal with respect to time (63, 64 in Fig. 1).

Regarding claim 6, as shown in 53 and 61 of Fig. 1, a single down-converted signal is generated.

Regarding claims 7-9, since Leung teaches an FM receiver (43 in Fig. 1) which requires the process of tuning, the claimed limitations such as means for altering the bandwidth and means for altering the center frequency are inherent (may also see the background section of the present application).

Regarding claim 11, Leung also teaches means for altering the amplitude (53 or 62 in Fig. 1).

Regarding claims 12-14 and 16, Leung also teaches using software to decode the received signal (col. 10, line 36). The claimed limitations are self evident in the domain of personal computer, especially when executing commands of the software.

Regarding claims 17 and 18, Leung teaches means for importing (10 to 20 in Fig. 1) a digital modulated signal from a personal computing device (10 in Fig. 1, col. 6, lines 27-29), means for converting the digital modulated signal to an analog signal (24 in Fig.



1), means for up-converting the analog signal to a radio frequency signal (30, 41 in Fig. 1) and means for transmitting the radio frequency signal (output of 41 in Fig. 1).

Regarding claim 19, Leung further teaches means for connection to at least one bus within the personal computing device (col. 6, lines 38-39).

Regarding claim 21, Leung also teaches means for assembling the signal with respect to time (21, 22 in Fig. 1).

Regarding claim 24, as shown in 24 and 31 of Fig. 1, the means for up-converting receives a single analog signal.

Regarding claims 25-27, since Leung teaches an FM transmitter (41 in Fig. 1) which requires the process of tuning, the claimed limitations such as means for altering the bandwidth and means for altering the center frequency are inherent (may also see the background section of the present application).

Regarding claim 29, Leung also teaches means for altering the amplitude (23 or 31 in Fig. 1).

Regarding claims 30 and 31, Leung also teaches using software to process the to be transmitted (13 in Fig. 1). The claimed limitations are self evident in the domain of personal computer, especially when executing commands of the software.

Regarding claim 33, see the rationale applied to claim 1.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (U.S. Patent No. 5,444,697, "Leung" hereinafter) in view of Hammer et al. (U.S. Patent No. 4,396,978, "Hammer" hereinafter).

Leung teaches the claimed limitations (see the rationales applied to claims 1 and 18 above), but does not teach means for performing direct memory access with memory means located within the personal computing device.

Hammer teaches providing a direct memory access unit to enable the transmission speed of the data to be increased (col. 1, lines 57-63). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use means for performing direct memory access unit to increase data transmission speed.

13. Claims 5, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (U.S. Patent No. 5,444,697, "Leung" hereinafter) in view of Sugita et al. (U.S. Patent No. 4,396,978, "Sugita" hereinafter).

Regarding claim 5, Leung teaches the claimed invention as applied to claim 1 above, but does not particularly teaches an in-phase down converted signal and a quadrature phase down converted signal inputting to the A/D conversion block 61.

Sugita teaches, in a QAM/OFDM system (col. 1, lines 28-31), an in-phase A/D converter and a quadrature phase A/D converter (12, 13 in Fig. 2) that receive an in-phase down converted signal and a quadrature phase down converted signal, respectively. It is known a QAM signal has in-phase and quadrature components. Since the system of Leung is also a QAM/OFDM system (11, 72 in Fig. 1), it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate an in-phase A/D converter and a quadrature phase A/D converter into the A/D conversion block of Leung so as to process the in-phase and quadrature components.

Regarding claims 22 and 23, Leung teaches the claimed invention as applied to claim 18 above, but does not particularly teaches that the D/A conversion block 24 outputs an in-phase signal and a quadrature phase signal to the means for up-converting.

Sugita teaches, in a QAM/OFDM system (col. 1, lines 28-31), an in-phase D/A converter and a quadrature phase D/A converter (D/A CONV. in Fig. 2) that output an in-phase signal and a quadrature phase signal, respectively, to the up-converter (the multipliers coupled to the LPF in Fig. 2). It is known a QAM signal has in-phase and quadrature components. Since the system of Leung is also a QAM/OFDM system (11, 72 in Fig. 1), it would have been obvious to a person of ordinary skill in the art at the

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time the invention was made to incorporate an in-phase D/A converter and a quadrature phase D/A converter into the D/A conversion block of Leung so as to process the in-phase and quadrature components.

14. Claims 10 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leung et al. (U.S. Patent No. 5,444,697, "Leung" hereinafter) in view of Brajal et al. (U.S. Patent No. 5,548,582, "Brajal" hereinafter).

Leung teaches the claimed limitations (see the rationales applied to claims 1 and 18 above), but does not teach means for frequency hopping.

Brajal teaches an OFDM frequency hopping system (abstract, col. 3, lines 3-6). It is known that the combination of OFDM with frequency hopping has the promise of providing bandwidth on demand and jamming resistance. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the means for frequency hopping, as taught by Brajal for the advantage of jamming resistance.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chieh M Fan whose telephone number is (571) 272-3042. The examiner can normally be reached on Monday-Friday 8:00AM-5:30PM, Alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



Chieh M Fan  
Primary Examiner  
Art Unit 2634

cmf  
September 1, 2004